



Village of Key Biscayne Floodplain Management Plan (FMP) 2010 Update

For the purpose of this report, the concept of a Repetitive Loss Plan, as used in this Community Rating Services (CRS) recertification document, is synonymous with Key Biscayne's Floodplain Management Plan (FMP). Progress on FMP implementation, as required in Section X of the FMP, falls within the context of CRS compliance Action Plans followed by the Village.

In order to reduce and minimize the repetitive loss properties the implementation of three projects is ongoing:

1. Stormwater Master Plan Update

In anticipation of the CRS 5-year Recertification, the Village issued a Request for Qualifications (RFQ) on June 8, 2010 for the update to the existing Stormwater Master Plan and Floodplain Management Plan. Responses to the RFQ were received by the Village on July 21, 2010. The Village evaluated the responses from various engineering consultants and approved a contract with Tetra Tech, Inc. on August 31, 2010.

Various scoping meetings were held between Village and Tetra Tech staff. A resolution was approved by the Village Council on September 14, 2010 approving a work authorization for the Stormwater Master Plan and Floodplain Management Plan Updates. Tetra Tech and Village staff have commenced work on these master plan updates. The Village expects to complete the drafts to the Stormwater Master Plan and Floodplain Management Plan Updates in December 2010 for presentation to the Village Council.

The purpose of the updates of the stormwater master plan update is to identify the problem areas where the existing storm drain system is deficient in removing stormwater runoff and to provide recommendations for mitigation to reduce future flooding and related insurance claims. The projects and activities identified in these master plan updates will enhance the Village storm water system and provide significant safety and quality of life improvements for residents when completed.

The update to the Floodplain Management plan will include the adoption of the Miami-Dade County Local Mitigation Strategy (LMS) and the Repetitive Loss Area Analysis (RLAA) conducted in 2009 and 2010 to determine possible mitigation solutions to minimize the repetitive loss properties flood claims. Updates to the Repetitive Loss properties were submitted concurrently under separate cover to the Insurance Services office for review.

2. Comprehensive Review of Local Laws and Regulations

Recommendations issued by the Village's Floodplain Manager

Since the existing Floodplain Management Plan project was completed in September 1998 as part of the Village's participation in the preparation of a County-wide Local Mitigation Strategy, an update is currently being prepared as part of the and to be included in the aforementioned Stormwater Master Plan and Floodplain Management Plan updates. An examination of the Village's flood ordinances is part of this update to determine the feasibility of bringing this document in compliance with Federal Emergency Management Agency (FEMA) CRS criteria.

The Administration has issued the following recommendations to the Village Council:

- a. Increase the requirement that the lowest floor of all new construction be above the BFE elevations shown in the most recent Flood Insurance Rate Map (FIRM). In the future, the lowest floor of all new construction would be 12 inches above BFE elevations.
- b. Increase from 1 to 5 years the waiting period from the time a Certificate of Completion is issued to apply for new building permits for all construction work in existing properties with a lowest level below the BFE elevations shown in the most recent FIRM. This change applies to construction in the A zone within the definition of *Substantial Improvement* in Chapter 10 of the Code of Ordinances of the Village of Key Biscayne, Florida.

3. Storm Drainage Upgrade

The following stormwater projects have been completed in fiscal year 2009. These projects enhance the Village stormwater system and provide significant safety and quality of life improvements for residents.

- a. Rehabilitation of Stormwater Injection Wells

Fifteen years ago the Village developed a series of stormwater drainage collection systems connected to 37 deep gravity injection wells (last years report was incorrect when stating 40). The Village has routinely cleaned and maintained the collection system pipes and structures; however, the wells have not been cleaned since their initial installation and are increasingly problematic. The wells are in need of rehabilitation in order to function properly and efficiently.

In January 2010 a Village wide storm drainage well inspection report was conducted. All Village wide wells located throughout the Village of Key Biscayne were inspected. The results showed 28 wells at different locations were in need of rehabilitation. In all the 28 wells, sand, slit and debris was cleaned out. Wells were re-developed and tested. The project was completed in September 2010 with a total cost of \$293,080.13. The Village obtained a matching grant from the South Florida Water Management District for this project

b. Ocean Lane Drive Stormwater Pump Station Upgrade

In 1995, the Village constructed a stormwater pumping station at the east end of Ocean Lane Drive. The roadway takes in drainage overflows from large condominium projects on either side of the road. The station's twin 4000 gpm vertical propeller pumps have been in service since 1995 and need to be replaced. Work includes the installation of temporary bypass pumping equipment during the pump station upgrade process.

The project consisted in rehabilitating the existing pump station. The two pumps were disassembled and restored to its near-original condition. The top slab of the pump station was modified and the wet well was cleaned out of all sand, silt and debris. The project was completed in August 2010 with a total cost of \$261,960.76. The Village obtained a matching grant from the South Florida Water Management District for this project.

c. Water, Sewer and Reclaimed Water Project

In June 2009 the Village completed the Water, Sewer and Reclaimed Water (WSR) Project which provides approximately 710 new sanitary sewer connections to single-family homes, duplexes, the Key Biscayne branch library and the Key Biscayne Community Church. Five catch basins were installed as part of the WSR project connect to the existing deep drainage well installed during the Village's 1997 storm water project.

4. Beach Renourishment Project and Beach Maintenance Programs

The FMP includes a number of ongoing tasks that are significant in the mitigation of flood hazards. These tasks extend beyond continued management of "normal" ongoing CRS-mandated activities such as Drainage System Maintenance, Flood Warning, Map Information, Outreach Projects and Library.

The Village's Beach Renourishment Project and Dune and Beach Maintenance are ongoing tasks. They are particularly significant in that the beach-dune system represents a barrier island's first line of defense against storm surges. The Village maintains a capital outlay expenditure item for these efforts as part of the Activity #420.

The Village completed the Dune Restoration Program in May 2008. The project consisted in bringing approximately 5,000 tons of sand to restore and enhance two specific problem areas along the municipal beachfront, removing all exotic species in the dune area and replacing them with native ones.

As stated in the 2009 update, the Village expected to complete the Beach Renourishment Project in FY 2010-2011. This project is still in the permit processing stage. The Beach renourishment environmental permit processing is ongoing with the U.S. Army Corps of Engineers, Florida Department of Environmental Protection (DEP), and Miami Dade County Department of Environmental Resources Management (DERM). A formal Request for

Additional Information (RAI) was received from the Corps of Engineers on 9/22/10. Field work to map marine resources (seagrass) along the beach, pipeline corridor, and offshore borrow areas was completed in late August 2010; data is being processed and maps prepared. The Village is also evaluating potential upland sand sources that may be more cost-effective. These upland sand sources must be evaluated by a geologist in accordance with DEP standards. The cost and schedule for this study is currently being evaluated by the Village.

Implementation of Seagrass Restoration and Mitigation Plan is currently underway to fulfill requirements set by the DEP prior to the next beach renourishment. Most of the sediment placement, bird staking, and baseline monitoring has been completed. The Village is working to complete the remaining 0.3 acres of seagrass mitigation to address impacts from the 2002 beach nourishment project. This mitigation must be completed prior to the next beach nourishment project. The Village received a Notice of Completeness Letter on 8/26/10, and a permit modification for the remainder of the mitigation is expected within 90 days of 8/2/10. The Village Attorney is negotiating the agreement (MOA) with Biscayne National Park for mitigation within the park.

The FMP update report was prepared in conjunction by the Village Floodplain Manager, the Department of Public Works, the Web Manager, Tetra Tech and the CRS Coordinator.

A copy of this report can be obtained in the Village's website www.keybiscayne.fl.gov.